

# Promoting Clear Identification of Diabetic Retinopathy

ICD-9-CM Coordination and  
Maintenance Committee Meeting

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# Overview

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- Clinical Manifestations and Diagnosis of Diabetic Retinopathy and Diabetic Macular Edema
- Disease Epidemiology
- Inadequacy of Current Diagnostic Codes
- Proposed Modifications and Clarification
- Discussion

# Diabetic Retinopathy (DR)

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- Diabetic Retinopathy is a disorder of the retinal vasculature that eventually develops to some degree in nearly all diabetic patients<sup>1</sup>
  - Third most common cause of blindness in the US and leading cause of blindness in individuals 20-74 years of age<sup>2</sup>
  - Significant impairment of quality of life<sup>1</sup>
- Significant resources are spent to treat patients with DR
  - Estimated \$422M in total direct health care expenditures<sup>3</sup>
- Treatment includes:
  - Control of diabetes-associated metabolic abnormalities (e.g. hyperglycemia; hyperlipidemia; hypertension)
  - Laser photocoagulation and vitrectomy

1. American Academy of Ophthalmology. *Preferred Practice Pattern: Diabetic Retinopathy.*, 2003

2. National Society to Prevent Blindness: *Vision Problems in the US*. New York, Prevent Blindness America, 1980

3. American Diabetes Association. Economic Cost of Diabetes in US in 2002. *Diabetes Care* 26:917-932, 2003

# Natural History – Diabetic Retinopathy

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## AAO Disease Severity Scale

No Apparent Retinopathy

Mild Non-Proliferative Diabetic Retinopathy

Moderate Non-Proliferative Diabetic Retinopathy

Severe Non-Proliferative Diabetic Retinopathy

Proliferative Diabetic Retinopathy

## Dilated Ophthalmoscopy Findings

No Abnormalities

Microaneurysms only

More than just microaneurysms, but less than severe NPDR

Any of the following:

- More than 20 intraretinal hemorrhages in each of four quadrants
- Definite beading in two or more quadrants
- Prominent intraretinal microvascular anomalies in one or more quadrants

And no signs of proliferative retinopathy

One or both of the following:

- Neovascularization
- Vitreous/preretinal hemorrhage

# Diabetic Macular Edema (DME)

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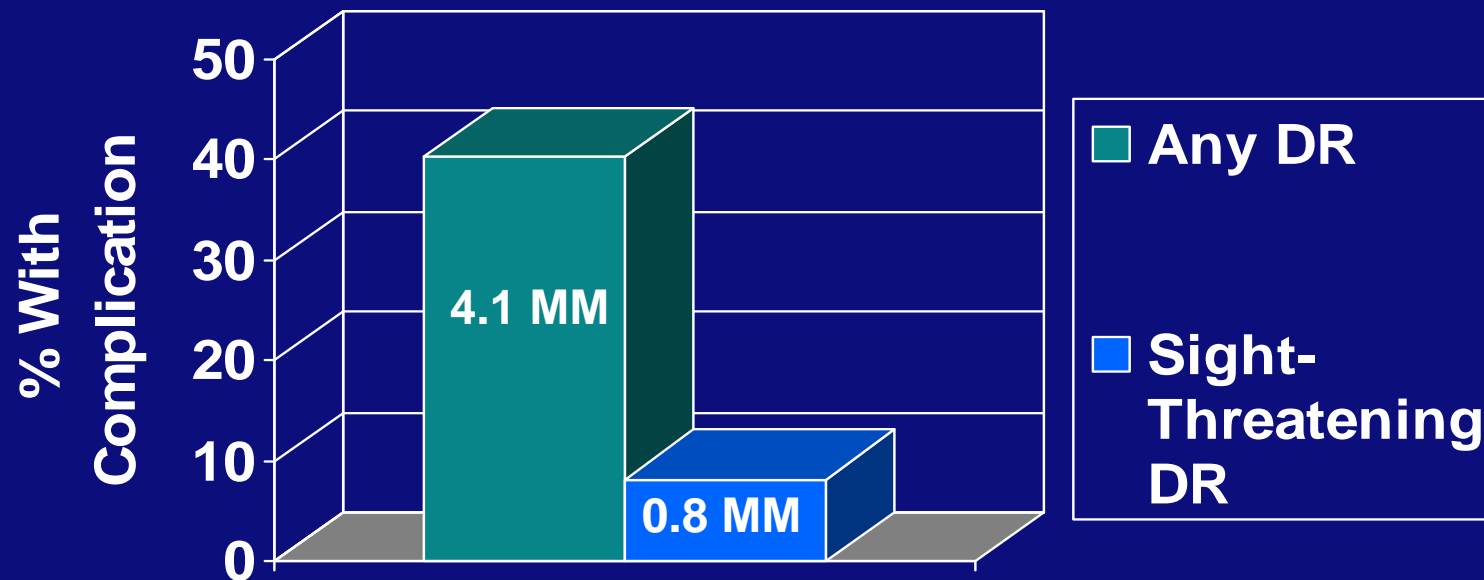
- Defined as retinal thickening or hard exudates in posterior pole resulting from increased vascular permeability<sup>1</sup>
- Frequent manifestation of diabetic retinopathy. Diabetic Macular Edema can occur in both the non-proliferative and proliferative stages of diabetic retinopathy
- Clinically significant macular edema (CSDME) may result in DR patients losing vision<sup>2</sup>
  - DME within 500  $\mu\text{m}$  of the center of the retina, or within 1500  $\mu\text{m}$  and one disc area or larger in size
  - Generally the threshold at which laser photocoagulation is applied

1. American Academy of Ophthalmology. *Preferred Practice Pattern: Diabetic Retinopathy.*, 2003

2. Ciulla TA et al: Diabetic Retinopathy and Macular Edema. *Diabetes Care.* 26:2653-64. 2003

# Epidemiology

## Prevalence of DR in the US



Source: Kempen et al, Arch Ophthalmol  
2004; 122:552-563

Sight-Threatening DR is defined as  
proliferative DR or severe  
nonproliferative DR or macular edema

# Inadequacy of Existing Codes

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## Background Diabetic Retinopathy (362.01)

- Older term that does not represent current AAO/NEI language
- Does not allow for clear understanding of disease progression
- Includes Macular Edema: not allowing for a clear understanding of the Non-Proliferative Diabetic Retinopathy patients at risk for vision loss

# Modification to Diabetic Retinopathy Codes

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- Maintain 362.01 *Background diabetic retinopathy*
  - Remove Diabetic macular edema & diabetic retinal edema from 362.01
- Maintain 362.02 *Proliferative diabetic retinopathy*
- Create four unique codes to describe the different stages of Diabetic Retinopathy
  - 362.03 *Mild non-proliferative diabetic retinopathy*
  - 362.04 *Moderate non-proliferative diabetic retinopathy*
  - 362.05 *Severe non-proliferative diabetic retinopathy*
  - 362.06 *Diabetic macular edema (code first for retinopathy)*  
Diabetic retinal edema



# Conclusion

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- DR and DME are frequent, progressive complications of diabetes associated with significant morbidity and costs
- Current ICD-9-CM codes do not allow for categorization of the different stages of DR resulting in the loss of valuable information on the epidemiology and costs of the disease
- Modification of current codes will better represent the clinical presentation of DR and DME
  - 362.01 *Background diabetic retinopathy*
  - 362.02 *Proliferative diabetic retinopathy*
  - 362.03 *Mild non-proliferative diabetic retinopathy*
  - 362.04 *Moderate non-proliferative diabetic retinopathy*
  - 362.05 *Severe non-proliferative diabetic retinopathy*
  - 362.06 *Diabetic macular edema (code first for retinopathy)*  
Diabetic retinal edema